Carbon Monoxide Poisoning from Hookah Smoking: An Emerging Public Health Problem

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Dear Editor:

The meeting abstract entitled “A Case of Carbon Monoxide Neurotoxicity due to Smoking Hookah” by Regina et al. (J. Med. Toxicol. (2017) 13:27–28) highlights an emerging public health problem: hookah-induced carbon monoxide (CO) poisoning. Hookah, also known as waterpipe, has been used for hundreds of years; however, over the past decade, this form of smoking has gained significant popularity in the USA, especially among the youth and young adults [1–3]. Based on the 2011–2015 National Youth Tobacco Survey, 7.2% of high school students currently smoke hookah—almost as many as those who smoke cigarettes [2]. “Currently” means participants smoked hookah within the past 30 days when surveyed.

Hookah smoking produces high levels of ambient CO—far above levels seen with other combustible smoking methods—primarily because charcoal is the heat source [4]. Of importance, hookah is often smoked socially in lounges, adding significant secondary exposures to CO. One laboratory study has shown that quick-light charcoal produces extremely high quantities of CO, well above those seen with natural charcoals [5]. Though we know of no reported deaths linked to

hookah-induced CO poisoning, there are 54 case reports in the medical literature of acute CO poisoning related to hookah smoking. Of these, half presented with loss of consciousness, an uncontrolled event predisposing users and bystanders to further injury. This group includes one victim who went to a hookah bar and did not smoke, but had a syncopal episode from secondhand smoke exposure to ambient CO [6].

There have been five US cases of carbon monoxide poisoning related to hookah previously reported in the medical literature [5, 7–9]. Of these, four victims presented with loss of consciousness. In addition, there are US newspaper reports of six CO poisonings from hookah, five of which occurred in a hookah bar after the building’s roof ducts were blocked by snow [10, 11]. What makes Regina’s case unusual is the seizure presentation. Among the 54 case reports, this has only been seen once before with hookah [12].

The case described by Regina underscores the potential severity of adverse experiences related to tobacco products. We encourage readers to report these adverse experiences to the NIH/FDA Safety Reporting Portal [13]. Reports can relate to any products made or derived from tobacco, e.g., cigarettes, roll-your-own tobacco, cigars, smokeless tobacco, e-cigarettes, hookah tobacco, and components, such as e-cigarette devices and hookah equipment. Moreover, anyone can report—health care providers, scientists, consumers, and non-consumers. Voluntary reporting plays an important public health role by enabling agencies, such as FDA, to identify and investigate population-based safety signals that may otherwise go unnoticed due to low frequency [14]. It also provides a means to alert healthcare providers to serious yet uncommon health events associated with tobacco product use [14].

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Compliance with Ethical Standards

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